RP

# University of Hawaii at Manoa

**Environmental Center**
Crawford 317 • 2550 Campus Road
Honolulu, Hawaii 96822
Telephone (808) 948-7361

Office of the Director

January 29, 1981

RP:0016

Colonel Alfred J. Thiede
Department of the Army
Corps of Engineers
Honolulu District
Building 230
Fort Shafter, Hawaii 96858

Dear Colonel Thiede:

Public Notice No. PODCO-O 1593-S
Surgebreakers at Kualoa Regional Park
Kaneohe Bay, Oahu

The proposal to install surgebreakers along the eastern shoreline of Kualoa Regional Park as described in the above cited public notice has been reviewed by Frans Gerritsen, Ocean Engineering; Fris Campbell, Hawaii Institute of Geophysics; Alexis Cheong Linder and Jacquelin Miller, Environmental Center. Our reviewers have expressed concern over the efficacy of the proposed structures to achieve the desired beach erosion control. Have the proposed structures been subjected to laboratory tests? Will they be anchored in some manner or simply placed on the existing sand substrate? In the latter case, we would expect erosion-undermining of the structures themselves with potential instability or further modification of intended performance.

In reviewing earlier documents and information on this area including the Corps of Engineers Draft Detailed Project Report on Kualoa, we note that the net current flow and littoral sand transport is from north to south along the eastward facing shoreline. The validity of this information, based on earlier field studies, is further supported by the results now noted to have occurred with the installation some time ago of the "sand grabber." The "sand grabber" succeeded in slowing or stopping the rate of erosion to the north but has drastically increased the rate of erosion to the south.

The erosion problems along the Kualoa coastline, not just at the park, appear to be the result of a loss of sediment supply to the shoreline. Thus, the long term solution would appear to be better served by determining the source and reasons behind depletion of natural sediments. The immediate sand replenishment needs could be best and most economically served by simply adding sand to the beach. To this end we would strongly support a renewed effort to evaluate and initiate offshore sand mining as has been considered in the past. Perhaps if the sand mining were proposed on a more limited scale (than previously suggested) and on an incremental basis, the social and environmental concerns expressed before could be mitigated.

We recognize the erosion problem and appreciate the Corps responsibilities and expertise in such matters. We are hopeful that the Statewide continuing problem of beach erosion can be resolved in an environmentally sound manner. To this end the use of offshore sand mining equipment appears to have the greatest potential.

Please do not hesitate to call on us if we can be of help in coordinating University input into this problem.

Yours truly,

Diane C. Drigot

Diane C. Drigot, Ph.D.
Acting Director

MU

cc: Fris Campbell
Frans Gerritsen
Jacquelin Miller
Alexis Cheong Linder
OEQC